

Totalview Debugging on Columbia

Category: Program Development Tools

DRAFT

This article is being reviewed for completeness and technical accuracy.

TotalView is an advanced debugger for complex and parallel codes. It has been installed as modules. To find out what versions of totalview are available, use the command 'module avail totalview'.

You'll need to rely on the ForwardX11 feature of your ssh. First, you'll have to make sure that your sysadmin had turned on ForwardX11 when SSH was installed on your local system or use the -X or -Y (if available) options of ssh to enable X11 forwarding for your SSH session.

For debugging on the front-end cfe2, do:

- Login to the front-end cfe2
- Compile your code with -g
- Make sure that X11 forwarding works and test it with xclock

```
cfe2%echo $DISPLAY  
cfe2:xx.0  
cfe2%xclock
```

- Load the totalview module

```
cfe2% module load totalview.8.9.0-1
```

- Start totalview. For serial jobs:

```
cfe2% totalview a.out
```

For MPI jobs built with SGI's MPT library:

```
cfe2% totalview mpirun.real -a -np xxx a.out
```

For debugging on a back-end node, do:

- Compile your code with -g
- Start a PBS session and pass in the environment variable DISPLAY. Assuming PBS assign your job to run on Columbia21

```
cfe2% qsub -I -v DISPLAY -lncpus=8,walltime=1:00:00
```

- Test the X11 forwarding with xlock

```
PBS(8cpus)columbia21% xclock
```

- Load the totalview module

```
PBS(8cpus)columbia21% module load totalview.8.9.0-1
```

- Start totalview. For serial jobs:

```
PBS(8cpus)columbia21% totalview a.out
```

For MPI jobs built with SGI's MPT library:

```
PBS(8cpus)columbia21% totalview mpirun.real -a -np xxx a.out
```

More information about TotalView can be found at the [Totalview online documentation website](http://www.nas.nasa.gov/hecc/support/kb/entry/94/?ajax=1).

Article ID: 94

Last updated: 24 May, 2011

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